

Amendments to the Claims

1. (Currently amended) An isolated composition comprising:
 - a) a first single stranded nucleic acid;
 - b) a second single stranded nucleic acid, wherein said first and second nucleic acids are complementary to each other; and
 - c) at least one recombinant Rad52 protein from a higher eukaryote, wherein the isolated composition is not in a cell.
2. (Previously amended) A composition according to claim 1, 29, or 30 wherein said first and second nucleic acids are perfectly complementary to each other.
3. (Previously amended) A composition according to claim 1, 29 or 30 wherein said Rad52 protein is labeled.
4. (Previously amended) A composition according to claim 1, 29, or 30 wherein said Rad52 is a human Rad 52 protein.
5. (Previously amended) A composition according to claim 1, 29, or 30 wherein said first and second nucleic acids are minimally complementary to each other.
6. (Previously amended) A composition according to claim 1, 29, or 30 wherein at least one of said first and second nucleic acids are labeled.

Claims 7-13 (Canceled).

14. (Currently amended) A method of screening for a bioactive agent involved in nucleic acid binding comprising:
 - a) contacting:
 - i) a candidate bioactive agent;
 - ii) a first single stranded nucleic acid; and
 - iii) isolated Rad52 protein from a higher eukaryote; and
 - b) screening for determining said binding of said candidate bioactive agent and said Rad52 to said first nucleic acid.

Claim 15 (Canceled).

16. (Currently amended) A method of screening for a bioactive agent involved in nucleic acid binding comprising:
 - a) adding:
 - i) a candidate bioactive agent;
 - ii) a first single stranded nucleic acid; and
 - iii) isolated Rad52 protein from a higher eukaryote to form a mixture; and
 - b) screening said mixture for altered biological nucleic acid binding activity, when compared to the biological nucleic acid binding activity of said composition in the absence of said candidate agent.

17. (Canceled)
18. (Currently amended) A method of screening for a bioactive agent involved in nucleic acid annealing comprising:
 - a) adding:
 - i) a candidate bioactive agent;
 - ii) a first single stranded nucleic acid; and
 - iii) isolated Rad52 protein from a higher eukaryote to form a mixture; and
 - b) screening said mixture for altered ~~biological activity~~ nucleic acid annealing, when compared to the ~~biological activity~~ nucleic acid annealing of said composition in the absence of said candidate bioactive agent.
19. (Currently amended) A method of screening for a bioactive agent involved in strand exchange comprising:
 - a) adding:
 - i) a candidate bioactive agent;
 - ii) a first single stranded nucleic acid; and
 - iii) isolated Rad52 protein from a higher eukaryote to form a mixture; and
 - b) screening said mixture for altered ~~biological strand exchange~~ activity, when compared to the ~~biological strand exchange~~ activity of said composition in the absence of said candidate bioactive agent.

Claim 20 (Canceled).

21. (Previously amended) The method according to claim 14, 16, 18, or 19 wherein said Rad52 protein is mammalian Rad52 protein.
22. (Previously amended) The method according to claim 21 wherein said Rad52 protein is human Rad52 protein.
23. (Previously amended) A composition according to claim 1, 29, or 30 wherein said first and second nucleic acids are substantially complementary to each other.
24. (Previously amended) A composition according to claim 1 further comprising Rad51.
25. (Previously amended) A composition according to claim 1 further comprising RPA.
26. (Previously amended) A composition according to claim 1 wherein said Rad52 protein is at least 90% homologous to about amino acid 36 to about amino acid 185 of human Rad52 protein.

Claim 27 (Canceled).

28. (Previously amended) The method according to claim 14, 16, 18, or 19 wherein said Rad52 protein is labeled.

29. (Currently Amended) An isolated composition comprising:

- a) a first single stranded nucleic acid;
- b) a second single stranded nucleic acid, wherein said first and second nucleic acids are complementary to each other;
- c) at least one recombinant Rad52 protein from a higher eukaryote; and
- d) further comprising at least one Rad51 protein from a higher eukaryote,
wherein the isolated composition is not in a cell.

30. (Currently Amended) An isolated composition comprising:

- a) a first single stranded nucleic acid;
- b) a second single stranded nucleic acid, wherein said first and second nucleic acids are complementary to each other;
- c) at least one recombinant Rad52 protein from a higher eukaryote; and
- d) further comprising RPA,
wherein the isolated composition is not in a cell..

31. (New) The method according to claim 14, 16, 18 or 19 wherein said first nucleic acid and said isolated Rad52 are complexed prior to the addition of said candidate bioactive agent.